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Pitangus caudifasciatus (*D' Orb.*).

Tyrannus dominicensis (*Gmel.*).

Crotophaga ani (*Linn.*).

Chrysotis leucocephala (*Linn.*).

Columba leucocephala *Linn.*

Columbigallina passerina (*Linn.*).

Zenaida amabilis *Bonap.*

Actitis macularia (*Linn.*).

Arenaria interpres (*Linn.*).

Ægialitis semipalmata (*Bonap.*).

Ardea virescens (*Linn.*).

Sula cyanops *Sundev.*

NOTES ON THE HABITS, NESTS, AND EGGS OF
DENDRAGAPUS OBSCURUS FULIGINOSUS, THE SOOTY GROUSE.

BY CAPT. CHARLES E. BENDIRE.

THE SOOTY GROUSE, better known on the Pacific coast, however, under the names of Blue Grouse and Pine Hen, has a wide range of distribution. Ridgway, in his 'Manual of North American Birds,' gives its habitat as "Mountains near Pacific coast from California to Sitka, Alaska." It is found, however, equally abundant in suitable localities throughout the entire interior mountain system of the Northwest, as far east at least as the western spurs of the Bitter Root Range of Montana, fully 800 miles from the sea-coast, throughout the entire Blue Mountain and Cascade Ranges of Oregon, as well as through the mountains of Washington and Idaho Territories, and northern Nevada. These birds from the interior, beginning from the eastern foot-hills of the Cascade Range (vicinity of Fort Klamath, Oregon), and throughout the remaining localities mentioned, are, however, much lighter and paler colored than the type specimens of *D. obscurus fuliginosus* Ridgway, which were obtained in the vicinity of Sitka, Alaska, but are nevertheless referable to this form rather than to *D. obscurus* (Say).

I have met with the Sooty Grouse in all the above-mentioned localities in the Northwest, and have had excellent opportunities to observe their habits. As a game bird, considered from a sportsman's point of view, it has no peer, and its flesh, in gastro-nomic value, is of an equal order of excellence. Although a resident throughout the year, wherever found, the Sooty Grouse is seldom seen during the winter months, spending almost the entire time in the tops of tall, bushy fir and pine trees, which it leaves only for a short time about the middle of the day to procure water from some little mountain spring.

Their presence in a tree selected by these birds as a roosting and budding place can, however, be readily detected by a close observer, especially when the ground, as it almost invariably is at that time of the year, is covered with a foot or two of snow. The food of the Sooty Grouse during the entire winter consists almost exclusively of the buds and tender tops of the pine and fir branches, as well as of fully grown pine needles. In picking these off, a certain amount is usually rejected, or dropped by accident, and I have seen fully a bushel or more scattered about the base of a single tree, which I attributed at first to the work of squirrels, till I found out otherwise. The use of such food imparts to the flesh of these birds at this season a strong, resinous flavor, not particularly relished by me at first. After finding such a tree used as a roosting place, it still remained to locate the birds, which generally proved to be a more difficult matter than one would anticipate. When they found themselves discovered they would usually remain perfectly motionless, and it was no easy matter to see a bird among the dense branches. If sitting on a good-sized limb, they would crouch lengthwise on it, leaving very little of their body exposed to view from below, and if one went off some little distance the foliage of the lower limbs would hide the bird equally effectively. Single families only are found together during the winter, say from eight to twelve birds, and frequently but two or three. I have scarcely ever seen larger packs together at any time. They certainly do not pack in the late autumn in the manner of Sage Fowl (*Centrocercus urophasianus*) and Sharp-tailed Grouse (*Pediocates phasianellus columbianus*), both of these species having been observed by me on more than one occasion in packs numbering over a hundred.

I first met with the Sooty Grouse on Craig's Mountain near

Fort Lapwai, Idaho, on the Nez Percé Indian Reservation, and was told by both trappers and Indians that these birds did not remain there during the winter, in which belief I consequently shared at that time. I was also told that when a covey had been located in a tree, by being careful always to shoot the bird sitting lowest, the whole lot might be secured successfully. This may be so, but somehow it always failed with me; usually after the second shot, often even after the first, and certainly at the third, the remaining birds took wing, and generally flew quite a distance before alighting again, nearly always placing a deep cañon between themselves and me.

At Fort Lapwai, Idaho, in the early fall of 1870 and of 1871, on two or three occasions I found a few of these birds mixed in and feeding with large packs of the Sharp-tailed Grouse. This must, however, be considered as an unusual behavior, as I never noticed it anywhere else subsequently, although both species were equally abundant in other localities where I met them frequently in after years. The favorite locations to look for the Sooty Grouse during the spring and summer are the sunny, upper parts of the foothills, bordering on the heavier timbered portions of the mountains, among the scattered pines and the various berry-bearing bushes found in such situations and along the sides of cañons. According to my observations these birds are scarcely ever found any distance within the really heavy timber. In the middle of the day they can usually be looked for with success amongst the deciduous trees and shrubbery found along the mountain streams in cañons, especially if there is an occasional pine or fir tree mixed amongst the former. The cocks separate from the hens after incubation has commenced, I believe, and keep in little companies, say from four to six, by themselves, joining the young broods again in the early fall. At any rate I have more than once come on several cocks in June and July, without seeing a single hen amongst them. High rocky points near the edges of the main timber, amongst juniper and mountain mahogany thickets, are their favorite abiding-places at that time of year. The young chicks are kept by the hen for the first week or two in close proximity to the place where they were hatched, and not till they have attained two weeks' growth will they be found along the willows and thickets bordering the mountain streams. Their food consists at first, principally of grasshoppers, insects, and tender plant tops,

and later in the season of various species of berries found then in abundance everywhere, as well as the seeds of a species of wild sunflower, of which they seem to be very fond. It is astonishing how soon the young chicks learn to fly, and well, too, and how quickly they can hide and scatter at the first alarm note of the mother bird which invariably tries by various devices to draw the attention of the intruder to itself and away from its young. A comparatively small leaf, a bunch of grass, anything in fact will answer their purpose; you will scarcely be able to notice them before they are all securely hidden, and unless you should have a well-trained dog to assist you, the chances are that you would fail to find a single one, even when the immediate surroundings were open. After the young broods are about half grown, they spend the greater portion of the day, and, I believe, the night as well, among the shrubbery in the creek bottoms, feeding along the side hills in the early hours of the morning and evening. During the heat of the day they keep close to the water, in shady trees and the heavy undergrowth. They walk to their feeding grounds, but in going to water they usually fly down from the side hills.

The love note of the cock has a very peculiar sound, hard to describe. It can be heard at almost any hour of the day in the spring, often in the beginning of March when there is still plenty of snow to be found, and it is kept up till well into the month of May. It is known as hooting or booming. The cocks when engaged in this amusement may be found perched on horizontal limbs of large pine or fir trees, with their air-sacks inflated to the utmost, wings drooping and the tail expanded. They present then a very ludicrous appearance, especially about the head. When at rest, these air-sacks, of a pale orange yellow color in the spring, are only noticeable by separating the feathers on the neck and upper parts of the breast, but when inflated they are the size of a medium orange and somewhat resemble one cut in halves. This call is repeated several times in rapid succession, decreasing in volume gradually, but can at any time be heard at quite a distance. It appears to be produced by the sudden forcing of a portion of the air in the sack quickly through the throat, and is quite misleading as to the exact locality where uttered, the birds being expert ventriloquists. I have frequently hunted in vain to locate one while so engaged where there were but a few trees in the vicinity; and although I searched each one through carefully

and with a powerful field glass to assist me, I had to give it up, completely baffled.

It is beyond me to describe this love call accurately. Some naturalists state that it resembles the sound made by blowing into the bung-hole of an empty barrel, others find a resemblance to the cooing of a pigeon and some to the noise made by whirring a rattan cane rapidly through the air. The latter sound comes in my opinion nearer to it than anything else. The closest approach to it I can give in letters, is a deep, guttural *muhum*, the first letter scarcely sounded.

The accounts of the nesting habits of the Sooty Grouse are somewhat vague, the number of eggs to a set being variously given as from eight to fifteen. I have personally examined quite a number of the nests of this Grouse between May 6, 1871, and June 25, 1883. The largest number of eggs found by me in a set was ten, in two instances, three sets contained nine each, seven sets contained eight each, and five sets seven eggs or less, the latter probably incomplete, although some of these sets of eggs were advanced in incubation. I think that eight eggs is the ordinary number laid by these birds.

Eggs may be looked for from April 15 to the latter part of May, according to altitude. The earliest date on which I obtained eggs of this Grouse was April 18, 1877, when a set was found by Lieut. G. R. Bacon, 1st Cavalry, containing seven fresh specimens. This nest was placed in a willow bush growing under a solitary pine tree, in a small ravine, five miles northwest of Camp Harney, Oregon. This nest was composed entirely of dry pine needles, picked up in the immediate vicinity.

A nest found by me April 22, 1877, about four miles west of Camp Harney, was placed under the roots of a fallen juniper tree, in a grove of the same species, growing on an elevated plateau close to the pine belt. This nest was well hidden, a mere depression in the ground, and composed of dry grasses, a few feathers from the bird's breast, and dry pine needles. The nine eggs were about half way imbedded in this mass, and nearly fresh.

As a rule, most of the nests found by me were placed in similar situations under old logs or the roots of fallen trees, and generally fairly well hidden from view, and amongst the more open pine timber along the outskirts of the forest proper. Occasionally, however, a nest may be found some little distance from

timber and in the lower parts of mountain valleys. I found such a nest on April 26, 1878, amongst some tall rye-grass bushes, in a comparatively open place and within a yard of Cow Creek, a small mountain stream about four miles east of Camp Harney. There was no timber of any size, only small willow bushes, within two miles of this nest. The nest was placed partly under one of these rye-grass bushes, and the bird sat so close that I actually stepped partly on her and broke two of the eggs in doing so. This nest contained eight slightly incubated eggs. It was composed of dead grass and a few feathers.

The most exposed nest, without any attempt at concealment whatever, that came under my observation, I found on June 8, 1876, on the northern slope and near the summit of the Cañon City Mountain, in Grant Co., Oregon, at an altitude of about 6800 feet. I was returning from escort duty to Cañon City and sent the party with me around by the stage road which wound in zigzag turns up the steep mountain, myself and one of my men taking a much shorter but far steeper Indian trail which intersected the wagon road again on the summit.

Near this intersecting point the trail passed through a beautiful oval-shaped mountain meadow of about an acre in extent, and near the summit of which stood a solitary young fir tree. No other trees were growing nearer than thirty yards from this one. The meadow itself was covered with a luxurious growth of short, crisp mountain grass and alpine flowers, altogether as lovely a spot to take a rest in as could well be found. Arriving at this point, and knowing that the party would not be along for more than half an hour at least, I dismounted and unsaddled my horse to let him have a roll and a good chance at the sweet mountain grass, of both of which opportunities he was not slow in taking advantage. Throwing the saddle in the shade made by the little fir, I lay down to take a rest myself. I had a fine setter dog with me, who had been ranging along both sides of the trail and who came up wagging his tail just as I had settled myself comfortably. 'Rock,' my setter, had approached perhaps within two feet of me at a pretty brisk lope, when all of a sudden he came to an abrupt halt, fairly freezing and stiffening in his tracks, and made a dead point alongside of me. I could not understand at first what this all meant, even my horse thought it worth the while to stop eating, and with its ears pointed forward was looking in the same

direction. 'Rock' was fairly trembling with excitement, but kept to his point. Jumping up quickly, I looked to the right and rear, thinking that perhaps a rattlesnake might be coiled up in the grass, and saw at once the cause of my dog's strange behavior. It was only a poor Sooty Grouse sitting within three feet of me on her nest containing two chicks and seven eggs on the point of hatching. It was as touching a sight as I had ever seen, the poor bird, although nearly scared to death, with every feather pressed close to her body, and fairly within reach of the dog, still persisted in trying to hide her treasures; and her tender brown eyes looked entreatingly on us rude intruders, and if eyes can speak, hers certainly pleaded most eloquently for mercy. She let me almost touch her before she fluttered off the nest, feigning lameness, and disappeared in the neighboring undergrowth. Counting the eggs, and examining one of the young chicks which apparently had only left the shell a few minutes before, I at once vacated this vicinity and took up a position some fifty yards in an opposite direction from what the bird had taken, to watch further proceedings. The grass was so short that it did not hide the bird which, after perhaps ten minutes' waiting, came slowly creeping and crouching towards the nest and covered the eggs again. I did not disturb her further, and hope that, although her selection of a nesting site so thoroughly exposed was not judicious, she succeeded in rearing her brood in safety. None of the eggs in the nest touched each other; they were all about half covered or imbedded in the material out of which the nest was made—dry grass, pine and fir needles, and a few of the bird's feathers presumably plucked out by herself.

Incubation lasts about eighteen days. Females predominate in numbers. The weight of full grown cocks varies from two and a half to three pounds; I have never obtained one that weighed more. Hens weigh from one and three-quarters to two and a half pounds; the latter weight, however, is rare. Many of the young broods are fully grown by August 15. They afford excellent sport, lie well to a dog, often letting you almost step on them before taking wing, and are strong and swift flyers. Their ordinary note very much resembles the cackling of the domestic hen. The Indian name of the Sooty Grouse on the Northwest coast is *tyhee cullaw-cullaw*, chief bird.

As stated before, according to my own observation, the usual

numbers of eggs laid by the Sooty Grouse is about eight, and occasionally as many as ten are found in a set. Their ground color varies from a pale cream color to a creamy buff, the latter predominating; in a single set before me it is a pale cinnamon. The eggs are more or less spotted over their entire surface with fine dots of chocolate or chestnut brown; these spots vary considerably in size in different sets of eggs, ranging from the size of a No. 3 shot, to that of mustard seed. These markings are generally well rounded, regular in shape, and pretty evenly distributed over the entire egg. They never run into irregular and heavy blotches such as are frequently found in the eggs of the Canada Grouse (*Dendragapus canadensis*), which approach the pattern found amongst the eggs of the Willow Ptarmigan (*Lagopus lagopus*) much nearer than the former. In the eggs of the Sooty Grouse all these markings, as well as the overlying ground color, can be readily washed off when the eggs are still quite fresh, leaving the shell of the egg a very pale creamy white in reality. The largest egg in the series in the National Museum collection measures 2.08×1.35 inches; the smallest 1.78×1.28 inches. Average size about 1.86×1.31 inches. The shape of the majority of these eggs is ovate; some may be called short ovate and others elongate ovate. There is no perceptible difference between the eggs of the Sooty Grouse and those of *Dendragapus obscurus*, the Dusky Grouse, as well as those of *Dendragapus obscurus richardsonii*, Richardson's Grouse; their habits are also essentially the same.

ON THE SUMMER BIRDS OF BERKSHIRE COUNTY, MASSACHUSETTS.

BY WALTER FAXON.

DURING the summer of 1888 I spent a month (June 17 to July 16) in Berkshire, and made as complete lists as possible of the birds found in the extreme southern part of the county, and near the northern border, especially on the Saddle-Back or Graylock range of mountains. These lists, together with Mr. William